

From the above two cases it is revealed that

1. Depending upon the facilities available at the site of construction, provided there are contiguous objects which can be spanned by extending the limbs (as the purlin between the rafter ends in case No. 1) the spider prefers to lay the foundation line only entirely by foot. Only when the gap is long the kite method of paying out thread to the wind is adopted.

2. Foundation line on the sides and below are made by the dropping method or by trailing and hauling the loose thread taut.

3. The first bridge line is converted into

spokes in Case No. 2 and the upper boundary line made afterwards.

4. Spokes are generally made by trailing loose thread and carrying it to the boundary line and hauling it tight.

5. The number of spokes and spiral rounds is not constant.

6. Construction proceeds from 'above' to 'below'—the structure broader nearer the upper foundation line gradually tapering down.

Altogether it may be generally stated that an orb-weaver modifies its mode of construction to suit the different situations.

2/168, NEW KALPATHY,
PALGHAT-768 003 (KERALA),

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March 21, 1980.

22. A NOTE ON *PRASHADUS PIROTANSIS* (MENON AND DATTA GUPTA) (ECHIURIDAE) FROM THE GULF OF CAMBAY, INDIA

Prashadus pirotansis (Menon and Datta Gupta), subfamily Thalassematinae, family Echiuridae, was first described by Menon and Datta Gupta in 1962 (Type locality: Pirotan Island in the Gulf of Kutch, India) under the genus *Ikedosoma*. Datta Gupta and Menon (1970) mentioned 'It should be proper at this stage to place the species under a separate genus'. Stephen and Edmonds (1972) erected a new genus *Prashadus* to accommodate *Ikedosoma pirotensis* and remarked that 'the genus is unique in the family Echiuridae on account of the distal position of its nephrostome'. Till today it enjoys the status of a monotypic genus. It resembles closely to *Ikedosoma* (Echiuridae) on the one hand and *Ikedea* (Urechidae) on the other.

The method of collection and habitat of this species are described in detail as the original description regarding the same appears to be

insufficient. Presence of this animal on mud flat can be detected by its long, extensile proboscis. It is useless to remove this animal from its burrow by pulling on its proboscis as the latter invariably tears off and the animal remains hidden. It rests at a depth of 100-120 cm below the surface of the substratum. The general method of collection of echiuran described by Stephen and Edmonds (1972) is 'by pushing a piece of rubber tubing down the tube made by its proboscis' and then by carefully digging the substratum to expose the animal. But to dislodge this animal by this method is not possible as it lives in the mud with gravel and sand above.

In the Gulf of Kutch the substratum (mid-intertidal zone) which the animal inhabits consists of superficial layer of soft mud about 30 to 40 cm deep, followed by hard mud about 30 to 35 cm and finally a mixed layer of hard

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mud, sand and gravel. In some places the third layer is absent and the second layer continues upto a depth of 120 cm or so. But in some places black humus soil is noticed in the superficial layer just below the soft mud. One should be careful about the soft mud wherever it occurs, as it is about knee deep. Whenever a pit is made in the soft muddy substratum water oozes immediately into it and fills it up. So, as long as the digging continues, water is to be removed frequently. But in Bhavnagar (Gulf of Cambay) the condition is different. The superficial layer of mud is hard and about 40 cm deep, then follows the sand, hard mud and gravel. It requires three to four persons to dig the animal out. The substratum (upper intertidal zone) should be dug around the hole (through which the proboscis projects out) about 45 to 50 cm away from it, upto a depth of 120 cm. While digging, care is to be taken that the animal should not be disturbed in any way. Then the soil column is to be scraped carefully from periphery of the hole, the wall of which is cemented throughout by mucus. The animal should be caught by the trunk (not by the proboscis) and carefully taken out.

I had the opportunity of surveying the coasts of Tamilnadu, Kerala, Karnataka, Gujarat and some parts of the Andaman Islands and noted the restriction of the species to the Gujarat Coast.

ZOOLOGICAL SURVEY OF INDIA,
27, J. L. NEHRU ROAD,
CALCUTTA-700 016,

April 26, 1979.

The present findings show that in addition to the localities (Pirotan Island, Byet Island, Deeda Island and Sika-in the Gulf of Kutch) mentioned by Menon and Datta Gupta (1962) it is also available at Bedi, Rosy, Sarmat and Navlakhi in the Gulf of Kutch and Bhavnagar in the Gulf of Cambay. It is for the first time recorded from the Gulf of Cambay. It is worthwhile to mention that this species occurred in abundance in Byet Island, Pirotan Island and Bhavnagar during my first survey tour in this area in 1968.

I visited Gujarat Coast after a gap of nine years and noted that the population of this species is much reduced. The question of seasonal fluctuation does not arise as the echiura lives in the burrows all the year around. The only other reason is probably the damage to the habitat. The areas are frequently visited by a large number of college students for field trips every year, as stated by several personnel of the Fisheries Department, Government of Gujarat. It is obvious that they make unsuccessful attempts to collect these animals by pulling on their proboscis and thereby damaging a good number. If no preventive measures are taken to restrict the visit of students to echiura inhabiting grounds particularly Balapur area of the Byet Island and the Pirotan Island, it will in no time, meet the same fate as *Balanoglossus* once faced at Krusadai Island.

BADRI PRASAD HALDAR

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